Remarks/Arguments

Reconsideration of this application is requested.

Claim Status

Claims 1-31 are pending in this application.

Drawing Objections

The drawings are objected to under 37 CFR 1.83(a) for not showing every feature of the invention specified in the claims. In response, Applicant notes that the specification and drawings support every feature specified in the claims.

For example, on page 49, lines 5-21, the specification discloses that variable capacitance thin film capacitor devices, shown in FIGS. 1-8, are used as part of a resonant circuit (capacitance component of a LC resonant circuit) of a radio frequency device, or as a capacitance component for coupling resonant circuits. By simultaneously forming an inductor utilizing the lower electrode layer, upper electrode layer or extraction electrode layer of the variable capacitance thin film capacitor device, or forming another resonant circuit in a margin area (where there is no variable capacitance thin film capacitor device formed) of the supporting substrate 1, the variable capacitance thin film capacitor can be used as a component of a voltage controlled radio frequency resonant circuit. In addition, it can be used for radio frequency devices, which are composite parts combining the resonant circuits, including a voltage controlled radio frequency filters, voltage controlled matching circuit chips, voltage controlled antenna duplexers and the like.

Therefore, since the specification and drawings disclose and illustrate every feature of the invention as specified in the claims, Applicant submits that these objections to the drawings be withdrawn.

Claim Rejections – 35 USC §102(b)

Claims 1-9, 11, 14, and 29 are rejected under 35 USC §102(b) as anticipated by Gikow (USPN 3,569,795). In response, Applicant asserts that independent Claims 1 and 8, as amended, distinguish over Gikow.

Gikow specifically discloses, in FIG. 3, a variable capacitor structure 30 having four electrodes 32, 33, 34, and 37. An alternating current (AC) signal voltage is applied across opposing electrode 32 and 34. One potential of the source of direct current (DC) control voltage is connected through resistors 35 and 39 to electrodes 33 and 34, respectively. The other potential of the source of DC control voltage is connected through resistors 36 and 38 to electrodes 32 and 37, respectively. *See Gikow, FIG. 3 and Col. 2, lines 6-19.*

The Office Action suggests that the AC voltage input terminal is electrode 34 and the AC voltage output terminal is electrode 32. In this case, Gikow specifically discloses two DC voltage input terminals 33 and 34. According to Gikow, the DC voltage input terminal is connected to both electrodes 33 and 34 via parallel resistors 35 and 39 and represents the positive voltage connection for the DC voltage. Moreover, the DC voltage input terminal is not directly connected to the AC voltage input terminal. Instead, the DC input voltage passes through resistor 39 before reaching the first DC voltage input terminal at electrode 34, and the DC voltage simultaneously passes through resistor 35 before reaching the second DC voltage input terminal at electrode 33. *See Gikow, FIG. 3.* Thus, according to Gikow, the AC voltage and the DC control voltage are input into the circuit from different input terminals. Therefore, clearly this circuit of Gikow is not equivalent to the circuit of the present invention.

In contrast to Gikow, independent Claims 1 and 8 of the present invention require that the input terminal of the circuit comprises a single input terminal and

serves both as a signal input terminal for receiving radio frequency signals and an input terminal for application of direct current bias. As shown in FIG. 1, for example, the single input terminal (I) serves as the input terminal for the variable capacitance element (C1) and also as the input voltage terminal for the bias line V1 having the resistance component R1. *See specification, page 19, lines 5-21.* In addition, as shown in FIG. 1, input terminal (I) is directly connected to both the variable capacitance element (C1) and the bias line (V1) having resistance component (R1). Gikow does not disclose or suggest this feature of the present invention as required by independent Claims 1 an 8.

Moreover, with reference to the present invention, it is noted that variable capacitance elements (C1, C2, C3) are disclosed as discrete circuit elements, which is in direct contrast to Gikow. In FIG. 3, Gikow specifically discloses a variable capacitor structure 30 having contiguous dielectric material 31 formed between electrodes 32 and 34. When DC control voltage is applied through resistor 39, it causes potential to build between electrodes 34 and 37 and also between electrodes 34 and 32 due to the negative potential or grounding of electrodes 32 and 37. Thus, this circuit of Gikow is not equivalent to the circuit of the present invention.

In view of the above remarks, Gikow does not disclose or suggest each and every feature of the present invention as required by amended independent Claims 1 and 8. Therefore, Gikow does not anticipate these claims or claims dependent thereon. Accordingly, Applicant submits that the rejections be withdrawn.

Claim Rejections – 35 USC §103(a)

Claims 10, 12-13, and 15-18 are rejected under 35 USC §103(a) as unpatentable over Gikow in view of Nakamichi (USPN 6,100,773). Claims 19-23 are rejected under 35 USC §103(a) as unpatentable over Gikow in view of Nakamichi and further in view of Arcidiancono (USPN 4,410867). In response,

Applicant asserts that these claims are patentable for at least the same reasons as discussed above with reference to independent Claims 1 and 8 due to their direct or indirect dependence on Claims 1 and 8. Therefore, Applicant submits that the rejections of these claims be withdrawn.

Claims 30-31 are rejected under 35 USC §103(a) as unpatentable over Gikow in view of Tsuda (USPN 6,018,282). In response, independent Claims 30-31 are amended in a similar manner as with independent Claims 1 and 8 and, therefore, are patentable for at least the same reasons as discussed above with reference to Claims 1 and 8. Moreover, since Gikow does not disclose or suggest each and every feature of the present invention as required by amended independent Claims 30-31, and Tsuda does not remedy the deficiencies of Gikow, these references alone or in combination do not anticipate these claims. Accordingly, Applicant submits that the rejections be withdrawn.

Conclusion

This application is now believed to be in form for allowance. The examiner is invited to telephone the undersigned to resolve any issues that remain after entry of this amendment. Any fees due with this response may be charged to our Deposit Account No. 50-1314.

Respectfully submitted,
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